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ABSTRACT OF THE DISCLOSURE

The field-effect semiconductor device includes a channel layer; a contact layer; a semiconductor structure having an electron-affinity different from those of the channel layer and the contact layer and formed between the channel layer and the contact layer; an ohmic electrode formed on the contact layer; and a Schottky electrode formed on the semiconductor structure. The junction face between the channel layer and the semiconductor structure and the junction face between the contact layer and the semiconductor structure are iso-type heterojunctions.